THE

MEDICAL AND SURGICAL REPORTER.

No. 862.] PHILADELPHIA, SEPT. 6, 1873. [Vol. XXIX.—No. 10.

Original Department.

Communications.

COMPARATIVE PATHOLOGY OF CHOLERA, YELLOW FEVER, AND MALIGNANT FEVER, OR PERNICIOUS MALARIAL FEVER.

BY JNO. J. CALDWELL, M. D.,
Of Baltimore, Md.

Read before the Maryland Epidemiological Association, August 19th, 1873.

Dr. Stillé, in his late learned lecture on epidemic or malignant cholera, says the only diseases which malignant cholera resembles are the sporadic form of cholera, serous diarrhœa, and poisoning by certain irritant substances, and illustrates its anatomical pathology by referring first to the blood. As a general rule the arteries are nearly empty; they sometimes, however, contain a small quantity of black and viscid blood. The veins and the right side of the heart are filled with dark blood, which is, in general, very imperfectly coagulated, and often fluid. Even when clots are formed they are for the most part soft, and resemble blackberry jelly. The veins of the brain are usually gorged with liquid and black blood, and the same is true of the veins of the small intestines; the red globules themselves undergo important changes; they have lost their watery constituents and become shriveled and irregular in shape, and may even be completely disintegrated.

Niemeyer, in his article on Cholera Asiatica, makes the same statement. The leading authors of the present day hold the same views. On opening the abdominal cavity, the peritoneal coat of the intestine presents a pink or rose tint; sometimes the color is very dark, the venous trunk being full of pitchy blood; the contents of the intestinal canal vary somewhat in its different portions.

The mucous membranes of the stomach seldom present any organic changes. In the large intestine are found the same changes of color and consistence of the mucous and sub-mucous membranes as at the upper portion of the intestinal canal, but with much less frequency. Neither the spleen nor liver present any special alteration. The gall bladder is generally distended with glairy bile. The kidneys are often congested, and the calices contain a large quantity of epithelial scales, which give the urine a turbid appearance in the bladder.

That its primary cause is material, and acts upon the gastro-intestinal mucous membrane, and upon the organic nervous system, we cannot doubt. Unlike other epidemics, such as yellow fever, malignant malarial fever, and typhus, we find no alteration of the blood that will throw light upon the succession of symptoms. These, on the contrary, point to the gastro-intestinal canal as the material starting-point of the morbid processes which develop cholera. Niemeyer says almost the same in the following words: "The comparison of the intestine in cholera to a portion of the skin from which the epidermis has been removed by boiling water or blister is very correct." Watson says, "The alimentary canal was found to contain a white liquid, such as had previously issued from the bowels. The veins were

loaded with thick black blood, and the bladder was found empty and contracted.

What is the remote cause of cholera?

Stillé says, "Evidently something received from without and swallowed." One opinion is that it consists of certain microscopic fungi, or their germs, which, on being received into the bowels, propagate their kind and destroy the epithelium. It is believed by some that this fungus takes its rise on the bank of the Ganges, and that it is produced upon the rice plant; this we will endeavor to demonstrate by analogy with the history of other fungi, and show in this instance what the learned author says, that here these fungi demonstrate themselves especially upon the gastro-intestinal canal, the material starting-point of Asiatic cholera, thus causing the profuse flow of serous and watery portions of the blood into the bowels; the vomiting, the purging, the prostration, and the waste in a few hours of the fullest and finest form; the chills and pallor of the extremities and trunk, so thickening the blood as to arrest its passage, and spread its cyanotic shadow over the whole surface of the body, thus paralyzing the heart and the organic nervous system, kidneys, and other secreting organs of the body. Thus this chain of pathology is the cause of death, so graphically described by this author.

Now, to demonstrate this parasitic theory, we will endeavor to show that they seem to have the power of electing different membranes or organs as their point of attack; for instance, in cerebro-spinal meningitis we find the arachnoid sadly implicated; in malignant malarial fever we find the following demonstrations, so ably exhibited by Professor Joseph Jones, of New Orleans.

Skin jaundiced, but much less than in yellow fever; head blood-vessels congested; heart normal; lungs congested, but otherwise normal; stomach contracted, containing a small quantity of mucus colored by bile; intestines normal in appearance; liver, upon the exterior, slate-colored, when cut, bronze within; the blood issuing from the cut liver remained of a dark purplish hue, and did not change to a brilliant scarlet, as in yellow fever.

Gall bladder; the bile is more abundant in malarial fever, and of a deeper color than in yellow fever; spleen enlarged and softened; it resembles a bag filled with mud; kidneys normal; bladder distended, with reddish-brown urine, of acid reaction; here we find the lesion in the spleen and gall bladder, principally, the spleen being utterly disorganized, and the gall bladder containing more than 1000 grs. of bile, having a high specific gravity, viz: 1036. Under the microscope the granular concretions in the bile were found to be composed chiefly of epithelial cells from the mucous membrane of the gall bladder, cells from the biliary ducts, and casts of the biliary tubes; under the microscope the splenic mud proved to be a mass of pigmentary matter.

How different in yellow fever. Here the form is full and bloated; skin golden yellow; black vomit running from the corners of the mouth; putrefactive changes rapid; heart, pericardium greatly congested, pale yellow, and as if undergoing fatty degeneration; numerous oil globules deposited within the muscular fibrilla of the heart; the blood contains urea, bile and carbonate of ammonia in abnormal quantity. When a drop of blood is allowed to fall upon a piece of white paper the centre remains bright red, while its edge is of a bright golden color. Urea and bile are found in all the secreting organs of the body, the fibrin of the blood almost entirely destroyed, the bile having the effect of dissolving the colored corpuscles.

Stomach; mucous membrane congested, soft, and eroded, and strongly alkaline, containing large quantities of dark grumous blood, or black vomit, also strongly alkaline; chemical analysis also revealed ammonia and urea; under the microscope this black vomit was found to consist of blood corpuscles, broken capillaries, and cells of the mucous membrane of the stomach.

Intestines; dark color, and distended with gas; liver yellow, resembling fatty degeneration; under the microscope its texture is found infiltrated with oil. Its cells were large and swollen, and filled with golden colored oil. Chemical analysis revealed fat in abnormal quantities, also urea, animal starch, and grape sugar.

The liver of yellow fever, as far as observation extends, according to Stillé, Wood, Lewis, and many others, is of a bright yellow color. A decoction of this liver was a bright golden color, which could be extracted by both water and alcohol.

The yellow fever liver is firmer and harder than malarial liver, and contained much less blood; much less readily acted upon by alkalies and acids.

The gall bladder contained only about 100 grs. of thick bile, while in malignant malarial fever it contained over one thousand.

Yellow fever vomiting is rarely bilious, except in the very commencement of the disease.

The stomach and intestines are rarely discolored by bile in yellow fever, while in malarial fever they are decidedly so.

The spleen normal in size and appearance.

The kidneys brownish-yellow, containing much free fat; tubules filled with oil globules, epithelial cells, and yellow granular albuminoid matter.

The sudden suppression of urine in yellow fever is of more fatal import than jaundice and black vomit, and is due to these structural changes; the suppression of urine favors the supervention of black vomit by the toxæmic effect of the retained urinary constituents. The urinary bladder contains little or no secretion. What urine is found is loaded with albumen casts, kidney cells, and albuminoid granular matter.

This paper, as you perceive, advocates the theory that the disease under discussion (with others) is the result of the toxæmic effect of fungi, or spores, and in conclusion we will show how these things are disseminated through the atmosphere, by quoting from the learned lecturer, Professor John C. Dalton, of New York. The microscopic fungi, if you please, of rice, the probable cause of cholera, are disseminated in two different modes.

First. By immediate contact, as when the mycelium of the decoy fungus passes directly from one point to another; and secondly, by dispersion of the spores, which may be wafted in every direction by the atmosphere.

Perhaps the communication by spores is the most important of the two. For the very diminutive size of the spores and their extreme lightness render them liable to be caught up and disseminated by every breath of wind; when they reach a favorable locality they begin at once to germinate and produce a new growth.

The atmosphere, accordingly, is the great vehicle for the transportation of these spores, all of them being capable of reproducing their parent mycelium, and many of them giving origin to disease of parasitic nature. There is no better example of the extreme delicacy and lightness of these spores than that shown by the common puff ball.

This well known fungus growth has an external envelope of papery consistence, and is filled internally with a quantity of smoke-light dust which is composed of nothing but spores. These spores, as you see, can be dispersed from the fungus like so much smoke, and each little puff which is discharged from its surface carries with it literally millions of microscopic spores, which float in the atmosphere and are carried in every direction by the moving currents of air; hence, when introduced into the body, and have manifested their specific effect, they may be reproduced and largely multiplied, and disseminate their peculiar disease through the various excreta of the body by fermentation, thus causing epidemics. This is the present popular cholera theory.

THE PLASTER OF PARIS APPARATUS IN GUN-SHOT WOUNDS OF THE LIMBS.

BY H. J. SEIGNEURET, M. D.,
Of Henderson, Minn.

In the month of February, 1873, I received from a friend, surgeon in the French army, a full description of the plaster of Paris apparatus employed during the last stage of the Franco-German war in gun-shot wounds of the limbs.

My friend says that the old methods of resection and amputation were entirely abandoned by the surgeons of both countries, and that, thanks to the new apparatus, they have preserved for usefulness thousands of limbs which otherwise would have been crippled or destroyed.

This new process being evidently an improvement on the various appliances used by us during the rebellion, and, as I suppose, not generally known to the Profession in this country, I think it a duty to give publicity to the use I have made of it after every other means had entirely failed. Last Christmas, Pat. Gallagher, a boy, 18 years old, of Green Isle, Sibley Co., Minn., received, close to the articulation of the humerus with the scapula, the full contents of a gun loaded with eight buckshot. Two inches of the humerus were ground to atoms, and all the fragments driven, with the lead, among the muscles, four only of the buckshot having passed through the arm.

Dressed in the ordinary way, after the removal of the loose fragments and projectiles. The wound made no progress in the right

direction, and after two months there were no signs of callous or of granulation. I resorted to the plaster of Paris apparatus as a forlorn hope, before resection or amputation.

Not having at hand a silver tube of the proper size, I bent a wire of platinum a dozen times on itself, and gave it the cylindrical form of a tube; this was introduced in the wound to drain the pus, both ends protruding above the skin in front and rear of the arm. I covered them with a cap to prevent infiltration of plaster in the wound. All around this I spread very thick collodion, and formed an artificial skin cover in a radius of one and one-half inches. Next, I bandaged the arm with flannel from the elbow up over the shoulder, and covered this flannel with another bandage of muslin saturated with olive oil, to prevent any adhesion of the plaster. The bandages were besmeared with collodion in the neighborhood of the ends of the discharge tube. Having laid the patient in supination, the arm was extended at an angle of 30° from the axis of the body, and supported by a smooth oiled board, furnished with hook and screw, to maintain the limb in its natural length by extension.

A first coating of pure plaster of Paris, prepared with water at 100° F., was rapidly spread over the bandages, forming a thin coating in front and on both sides. Before the solidification of this plaster, I quickly wrapped around the arm a piece of wire cloth, such as is used in the manufacture of corn-meal sieves, a hole adapted to the protruding back part of the discharge tube having previously been cut in it. This being fixed, I approached the two free margins of the wire cloth as tightly as possible in front, leaving a semicircular indentation in each one to envelop the front part of the discharge tube; this done, I turned the two margins at right angles, and maintained this cloth in position until sufficiently imbedded and hardened into the plaster.

My next step was to relax the extension screw to permit me to raise the arm and shoulder half an inch from the board; I supported the limb with half-inch pads, tightened the screw again, and ran over all a sufficient quantity of plaster and starch, this last substance being the quarter part of the compound paste. During the hardening process, I pared the rough coating so as to render it as light as practicable, without impairing its solidity.

After half an hour I prepared to open the mould, first removing the oiled board, then cutting into the plaster a furrow, shaped like a V; this furrow passing by the centre of the back discharge tube down to the elbow; I left it three-quarters of an inch wide at the outside, and only one-sixteenth at the bottom, where I met the wire cloth, which was left untouched. I also disengaged the back tube, and took off the cap which protected it against the plaster.

Then, proceeding in front, I cut into the plaster between the two upraised margins of the wire cloth, until I reached the oiled muslin, splitting the mould entirely. I also cleaned the front part of the discharge tube, and without difficulty opened the plaster mould, the wire cloth in the back part serving as a perfect longitudinal hinge to the apparatus. The manufacture of this apparatus having proved successful, I practiced sufficient traction with the hand to bring the limb to its natural length; then cautiously I shut the mould on it, and wrapped all with a few coils of bandage.

After two weeks the granulation began in earnest; in fifty days it had reached the tube, which was withdrawn and two short ones inserted in its place. And to-day, six months after the use of this apparatus, the boy is binding wheat in the field, using his arm as before the accident.

Medical Societies.

MEDICAL AND SURGICAL SOCIETY OF BALTIMORE.

[Reported by J. W. P. Bates, M. D.]

Capillary Bronchitis.

BY H. R. NOEL, M.D.

(This essay embraces some of the views of Roberts, Aitken, and Niemeyer.)

The older writers called this disease capillary or suffocative catarrh, a name which we think eminently judicious, as it not only gives the anatomical seat and nature of lesion, but also gives the lesion of function. It is usually an acute affection, though sometimes found in a chronic form in the aged. It may present simple hyperæmia, or may be of the catarrhal or croupal form; the catarrhal giving cells, mucus, pus, etc., and the croupal giving fibrinous elements.

The causes may be predisposing and exciting. The predisposing are:—

1. *Age.*—More common in infants, especially during dentition, and in the aged.

2. *Habits.*—Over-heated rooms, over-wrapping, and too much coddling are favorable to its production.

3. *General Health.*—Weak and enfeebled persons, diabetes, Bright's disease, scrofula, gout, rheumatism, etc.

4. *Weak Lungs.*—Tubercular deposits, cancer, etc.

5. Obstructed circulation, as in heart disease, ascites, etc.

6. *Occupation.*—Those exposed to heated rooms and cold draughts, exposed to wet and cold out of doors; knife, scissors, and steel grinders; workers in cotton, charcoal, etc.

7. *Climate.*—Damp, cold, fickle or changeable climates predispose to bronchitis.

8. *Season.*—Fall, winter and spring, in bad weather and inclement seasons.

9. More prevalent in large towns, etc.

The exciting causes are:—

1. Exposure to cold and moisture, and more especially if the patient has already a bronchial catarrh involving the larger tubes.

2. Inhalation of irritant gases, and of dust from steel, cotton, charcoal, etc.

3. Morbid blood conditions, as measles, typhoid fever, scarlatina, small-pox, gout, and rheumatism.

4. Sometimes epidemic, as during influenza.

Symptoms.—These vary somewhat, according to the amount of bronchial surface involved, and also as to the previous condition of the patient. If not very decidedly extensive, they are usually as follows:—

1. Shiverings, chills, etc., repeating themselves even during the rise of fever, headache, nausea.

2. Comparatively little pain at first, but an incessant dry, rasping cough.

3. Whistling, wheezing, sibilant rales.

4. Dyspnœa, but no dullness on percussion.

5. Rapid respiration, anxiety and restlessness.

6. Expectoration at first scanty, clear and viscid; afterwards more free, opaque, whitish or yellowish. If a large surface in each lung be implicated, the dyspnœa is excessive, and the restlessness and anxiety very marked, while the respiratory efforts are rapid and laborious. The face often indicates great terror and intense distress, and in children this sometimes amounts to an agony of fear. After two or three days there are muscular pains from straining in the violent paroxysms of coughing.

The shiverings, fever, dyspnœa, dry cough, rapid respiration, sibilant rales, clear percussion, etc., are the symptoms most reliable for diagnosis. The restlessness and distress are also of value. The absence of any great amount of pain, and the presence of the harassing paroxysmal cough in pure capillary bronchitis are remarkable, and can only be explained on this ground, viz.: the afferent nerves, conveying impressions to the nerve centres, do not belong to the class which transmit the sensations of pain, but form one portion of a physico-reflex arc, and the impressions received are transmitted to the nerve centre and a motor influence at once reflected back, which motor element we recognize as the muscular effort of coughing. Nature has here wisely protected these minute tubes from occlusion by tenacious secretions, and from obliteration by adhesive inflammation of the walls; the violent and convulsive efforts are, therefore, to a great degree conservative against obstruction of calibre, though if in too great excess, they are exhausting and injurious. It is evident, therefore, that the most delicate of all therapeutical questions will be, "*when* and *how far* to control this cough by anodynes;" and keen must be the observation of the practitioner, and shrewd his judgment, when in a severe case he desires to save his patient from the exhaustion of the cough, and at the same time avoid the great danger of obliteration of a large space of breathing surface, by permitting capillary occlusion from retention of secretions. If it be true, as stated by a high authority (Draper, p. 159), that each terminal bronchus has 20,000 air cells attached to it, and that there are 600,000,000 of these air cells in the lungs, we can readily appreciate the danger, in a case of extensive bronchitis, of the obliteration of the calibre of these tubes, even though the diameter be not more than from $\frac{1}{70}$ to $\frac{1}{10}$ of an inch, for such obstruction must cut off a large area of breathing surface and hasten asphyxia. And this is more particularly true of children too young to expectorate and thus relieve the tubes of this obstructive mucus, pus, or croupal formation, and yet whose impressible nervous systems render the incessant cough one of the most prominent and annoying symptoms. In several cases seen in the last few months, there appeared almost an absence of pain (except from muscular soreness), while there was a most marked and aggravating cough, continuous even during sleep, and recurring each day or night in paroxysms so distinct as to lead to a strong suspicion of complication by malaria. The bronchial membrane appeared almost in a state of anæsthesia as regards pain, but excessively active as regards reflex impressions resulting in motor impulses. Emetics demonstrated the croupal element in several of these cases.

Dangerous Symptoms.—When a very large area is involved, when the secretions are very fibrinous or croupal, when the patient is feeble or has a chronic disease of the lungs or heart, when a fresh attack from exposure complicates an already uncured attack of an extensive character, and when the patients are very young or very vulnerable children, we have often arising symptoms of a most dangerous import. These symptoms are apt to be of two kinds: 1. Those indicating an overwhelming of the nervous system; 2, those indicating approaching asphyxia.

1. *Nervous Elements.*—There is usually excessive cough, high fever, great headache, loss of sleep, intense restlessness, dry tongue, rapid pulse, then delirium or convulsions, coma and gradual death, preceded by profuse perspiration from paralysis of the muscles of the skin, and extensive bronchial rales from paralysis of organic muscular

fibres of the lesser tubes, causing retention of the secretions.

2. *Asphyxia.*—In the other class of cases the approach of asphyxia is seen in the violent efforts at respiration, the perpetual restlessness, the quivering nostrils, the paling lips, the bluish fingers, the general cyanotic appearance, the cold, clammy sweat, the falling temperature, the often gradual drowsiness, cessation of all cough, with bronchial rales and the death rattle. Niemeyer says that impending danger in the capillary bronchitis of children may be often foreseen from the following symptoms: 1. Sinking in of the epigastrium and of the hypochondriac regions, showing that the air cells are being exhausted and not refilled, owing to obliteration of calibre of tubes by retained secretions, etc.

2. Increased and permanent prominence of the supra and infra clavicular regions, showing that air is being forced into these air cells, but does not return, i.e., there is not the normal interchange between the air in the cells and the external atmosphere. So we shall find a species of permanent collapse at the basis of the lungs, and a condition of permanent distention at the apices. In each case normal respiration is not performed, and impending danger is to be dreaded. In the collapsed condition air fails to enter the cells; in the distended condition both air and carbonic acid fail to leave the air cells.

Bronchial catarrh of new-born children, Niemeyer thinks, is often mistaken for organic disease of the heart, as the cyanotic symptoms come on rapidly, from the fact that the child does not cough, and the imperfect development of the muscles of the chest and bronchial tubes permits rapid occlusion of many tubes, and rapid asphyxia by obliteration of the breathing surface.

Duration.—It is an acute disease, and will run its course in from five to twenty-one days—rarely over a month. In fatal cases death occurs in children usually between the fourth and tenth days; in adults, between the eighth and fourteenth days. Some cases are much more rapidly fatal. Children often die on the second or third day. The Emperor of Russia died (during the Crimean war) within, I think, 48 hours after the exposure which induced a relapse. Rarely does this form become chronic, but it sometimes lays the foundation for emphysema, and, according to Niemeyer, galloping consumption.

Diagnosis.—The diffused character of the chest sounds, the absence of dullness, crepitant rales, rusty sputa, a pain (never acute), the continued shiverings, the dyspnœa, restlessness, and the incessant cough are usually sufficiently characteristic.

Prognosis and Mortality.—It is a grave lesion, and the prognosis depends upon many elements. It is grave (1), if the disease be very extensive; (2), if in the very young or very old; (3), in feeble and delicate persons; (4), if it should complicate chronic heart or lung trouble; (5), if the sputa be very excessive and very tenacious, and symptoms of asphyxia threaten early; (6), if intercurrent disease complicate it.

The Morbid Anatomy shows diffused redness—arborescent redness—evidences of congestion; a swollen and thickened membrane; softened and abraded membrane; inflammatory products: if a recent case, scanty and tenacious mucus or fibrinous patches: if of longer standing, mucus-pus-fibrin, detached epithelium, exudation corpuscles, coagulated blood, occluded tubes and portions of lungs with air cells collapsed, and other portions with air cells distended from air retained by the occlusion. Occlusion during expiration would give collapse; occlusion directly after inspiration would give distention simulating emphysema.

From the morbid anatomy we can at once deduce the pathology as being almost certainly an inflammatory affection of the lesser bronchial tubes, involving the mucous membrane primarily; and important as it interferes with the function of respiration. It occurs from checked perspiration, direct action of cold on the membrane, or by extension from the larger tubes; or from the poisons of other diseases, as measles, typhoid fever, gout, rheumatism, small-pox, malaria, etc.; or caused mechanically by direct irritants, as steel, iron, coal dust, etc.

Treatment.—If, upon a careful examination of the patient, the *cause* be found to exist as a continuously operating one, it should, if possible, be removed. Under this head, irritant dusts, cold draughts, damp and cold working rooms, continuous flowing of saliva upon the breasts of children, going from an overheated room into the raw air, working or sleeping in overheated rooms, etc. If the cause cannot be removed at once, such as the poisons of specific diseases, we must regard these conditions, and shape our therapeutics as best we can to palliate the cause, while we endeavor to remove the intercurrent bronchitis. But in the majority of cases we will have to deal with a true catarrh, the result of incautious exposure to cold, and the treatment in these cases will depend simply upon the condition of the patient and the urgency of the demands for relief. In mild cases, and especially in adults, the treatment is comparatively easy, provided you can control your patient. It consists in a gentle laxative, a temperature of 60° to 70°; liq. ammon. acet., ʒij; spts. ether. nit., ʒss, every 4 hours; rest in bed; blankets in abundance; a thorough diaphoresis; potass. bromid., grs. xv.; morphiæ, gr. ½, every 6 hours; hot teas for from 2 to 5 days; and, in suitable cases, inhalations of warm vapor. In cases which cannot be controlled, and which will go out in spite of advice to the contrary, we can allay cough by morphia or chloral, protect the chest by several layers of flannel, order a camphor or belladonna plaster, and use strong tonics from the start. Should the secretion be very tenacious, we can give bromide of potassium, carbonate or chlorate of potass., muriate of ammonia, with small doses of wine of ipecac. or tinct. or fluid ext.

hyoscyamus. At nights there may be friction over the chest, with or without liniments. I usually order tr. camph., ℥ij; capsici, ℥ss; ol. olivæ, ℥iij; or equal parts of alcohol and ol. terebinth., or Stokes' liniment. At present I almost invariably order some preparation of quinine or cinchona as soon as the cough medicines are laid aside, and often before this is done.

But these are not the cases which demand our greatest skill. The cases requiring most attention and most careful practice are the acute and extensive ones, with fever, cough, restlessness, dyspnœa, orthopnœa, and sleeplessness. Chambers, of London, in acute cases, in adults, affixes a hot jacket poultice and renews it very often, so as to keep a constant moist heat over the entire chest; he also orders inhalations of warm vapor continuously for several days, and as soon as the sputa become free and opaque, gives either bark or quinia. He claims for this treatment great success, great relief from cough and dyspnœa, and a rapid convalescence. Niemeyer and others favor this inhalation, and speak most encouragingly of the results obtained. In acute capillary bronchitis, venesection, leeching, etc., are not now used, unless complicated by pneumonia or pleurisy, and then only with caution. Most if not all authorities appear to agree upon certain things as essential:—

1. Free diaphoresis, warm room, warm coverings, warm drinks, hot foot baths.

2. Warm or hot applications to the chest (Niemeyer even gives *hot* baths in extreme cases); mustard poultices, hot flannels, etc., are used as hot as can be borne.

3. For cough, morphia, atropia, hydrocyanic acid, chloroform, ether, etc. I greatly prefer bromide of potassium and chloral, used very guardedly.

4. Small doses of ipecac., tartar emetic, etc., in early stages.

5. If the secretions be tough, the alkalies and chlorides.

6. Tonics as soon as fever subsides; blisters, if required; painting with iodine.

In children, I do not think too much stress can be laid on the great value of diaphoresis in the incipient stages. Warm baths, hot flannels, hot poultices, with warm inhalations, if practicable, and warm rooms, are admirable therapeutic agents. I have seen great relief from a bold use of ammon. acet. and nitre, with hot teas. For incessant cough, without much fever, I have seen inhalations of chloroform, repeated 4 or 5 times a day, give complete relief, and this, in one case, in a child five months old. I am almost certain (many of our most prominent Baltimore physicians to the contrary, notwithstanding), that I have procured excellent results by: ℞. Calomel, gr. ½; tartar emetic, gr. $\frac{1}{16}$–$\frac{1}{10}$; potass. nit., gr. ½–j, every 4 or 6 hours, for 2 or 3 days. If, after the acute attack, the cough still continues troublesome, and secretion tenacious, I have found potass. bromid., potass. bicarb., vin. ipecac., and syr. senegæ or scillæ to give favorable results; and also hydrate of chloral, with potass. brom., if carefully watched. In using any narcotic, in severe cases, great care is necessary to avoid narcotism, if the secretion be at all free.

The dyspnœa, which is a marked feature of the disease, may be produced by two causes: 1. From spasm of the bronchial muscular fibre. Relieved by chloroform, chloral, ether, morphia or opium—some form of narcotic.

2. From occlusion of tubes and filling of air cells by excessive secretion; diagnosed by rales, etc. Assist expulsion by emetics boldly used, with stimulants and supporting treatment in the intervals. Support strength by beef tea, milk, cream, brandy, wine, etc., in small quantities, often repeated; but avoid full meals and prolonged sleep, as the one, by reflex action, may induce spasm and much coughing, and the other permits great accumulation of secretion, and hastens asphyxia.

As fever falls, give bark, quinine, iron, etc. I often prescribe the citrate of quinine and iron dissolved in good sherry wine, and have been much pleased with it.

Editorial Department.

Periscope.

On Mountain Climates.

M. Armieux has published, in his recent 'Medical Studies on Barèges,' some interesting observations on the effect of mountain climates and diminished atmospheric pressure. He has especially studied three subjects, which we shall pass in review successively. He has inquired into the influence of altitude: (1) On the size of the chest; (2) On the number of the respirations; (3) On the pulse. He has made his observations on himself, and on a series of military invalids sent from the military hospital at Toulouse to Barèges. He carefully examined them at the moment of their departure from Toulouse, and afterwards after a fixed residence of a certain length in the mountains.

The station of Barèges is about 4000 feet above the sea, which corresponds to 26.6 of

the barometer. Starting with these facts, M. Armieux has calculated that the weight of a litre of oxygen, which is 270 milligrammes at the level of the sea, is only 253 at that height, the mean difference being about 47 milligrammes per litre; whence it follows that, allowing 18 respirations per minute, and the absorption of oxygen being 8 litres for the same time, there would be a loss of 22.56 grammes of oxygen each hour, or 541.44 daily. It became interesting therefore, to examine what changes take place in the military invalids who spend four months continuously at Barèges, and who sustain during that period a loss of 25,920 litres of oxygen.

On May 4, 1867, Armieux took at Toulouse, almost at the level of the sea, measure of the girth of the chest, in 86 invalids. He found, as means, 871 millimètres in repose, and 905 millimètres in the greatest expansion of the chest.

After forty-five days' residence at Barèges, the measurement of the chest of the same man gave respectively as means, 888 millimètres in repose, and 917 millimètres when the chest was fully expanded; or as a mean of the augmentation of the measure of the circumference, a gain of 17 millimètres in the first case, and of 12 in the second.

After a residence of four months, measurement gave the following results: 900 millimètres in repose, and 930 in extreme expansion of the chest, thus giving a further increase of 12 to 13 millimètres on the former measurement, and a total increase of 25 millimètres in expansion, and 29 millimètres in repose of the chest since their leaving Toulouse (say about one inch). The capacity of the chests of the men submitted to this experiment had increased very sensibly during this residence of four months, no doubt in order to bring the function of respiration into equilibrium with the rarefaction of the oxygen.

According to the data of physiology, the number of respiratory movements per minute in the adult is about 18. The beats of the pulse are from 70 to 75 at the level of the sea, and it is generally admitted that the frequency of the pulse increases with the elevation. Parrot had found it 70 at the level of the sea, 75 at 3000 feet, 82 at 4500, and 90 at 6000 feet.

M. Armieux has not found these results confirmed in the invalids at Barèges. On the contrary, he found, not only that the pulse did not increase but that it diminished in frequency; and further, that if, according to ordinary physiological data, at the level of the sea the relation of the beats of the pulse to the movements of inspiration is expressed as 4 to 1, this correlation is no longer exact at Barèges, where the respiration is accelerated, while the pulse diminishes in frequency.

From the multiplied observations which Armieux has made, and of which he has given a detailed table in his work, he deduces the mean result that the number of inspirations has increased by 2 per minute, which corresponds with theory, but that the pulse has diminished by nearly 4 beats per minute, which is in contradiction to the usual observations. At the same time it may be remarked that Dr. Cavaroz, a military surgeon, obtained identical results in Mexico.

The correlation between the two functions of respiration and of circulation is thus broken. The flow of the blood to the lungs is accelerated; there is stagnation in those organs owing to the sluggishness of the heart, which is not active enough to relieve them; there is a diminution of the flow of blood to the brain; there is anæmia of the nervous centres, whence arise vertigoes and oppressions of the head, or pulmonary apoplexies, and various hemorrhages.

On Chloral-hydrate in Insanity.

"Next to subcutaneous morphia," writes Dr. S. W. D. Williams, quoted in the London *Medical Record*, "the introduction of the hydrate of chloral has proved the greatest boon to asylum physicians, for in it we possess an agent which exerts its hypnotic action with very great certainty, and also with safety, when even moderate care is used in its administration.

"As this (the Sussex Co.) was the first asylum in Great Britain in which it was used in the treatment of insanity, a few remarks founded on three and a half years' experience may not seem out of place.

"In acute mania, a single dose is not unfrequently followed by the happiest result. A patient who in the evening is violent and excited, or worn out from want of rest, will, after thirty, forty, or sixty grains of chloral, obtain eight or ten hours' sleep, and seem so much improved that in our earlier trials we almost hoped for a cure. Sooner or later, however, generally towards evening, the restlessness will return, to be again relieved by the chloral; and, as a rule, a smaller dose will now be productive of the same beneficial results. And thus the patient, in a longer or shorter time, will be steered through the disease and restored to health. In acute mania it is better, if possible, to limit its use to the night; and one large dose is more valuable than two or three smaller ones.

"In the general restlessness and agitation of progressive paralysis, it is often useful; and, contrary to the experience of some physicians, we have never seen it followed by bad consequences, or increase of the paralysis, other than could be accounted for by the progress of the disease.

"In that form of chronic mania verging on dementia, and accompanied by distinctive habits, the chloral hydrate has, in our experience, no equal; and observation convinces us that its use may be continued for many months without affecting the general health.

"In melancholia we do not use it much, regarding it as inferior to opium, and vastly inferior to subcutaneous morphia.

"It is unfortunate, but nevertheless true,

that chloral, even in large doses, will occasionally fail to produce any effect at all, and in these cases the most careful examination cannot detect the cause of failure. The analysis of Pellagio shows that the blood of animals poisoned with chloral contains chloroform in the same proportion as would be obtained by bringing a like quantity of chloral in contact with an alkali out of the body. It is, therefore, probable that when chloral fails, its failure is owing to the absence of that alkali which causes it to unfold its action.

"No fatal or dangerous effects have been seen in this asylum, though a great deal has been used, and it has often been considered necessary to order large doses of the drug. It is not easy to say what would be a poisonous dose. We saw in consultation a delicate female who had accidentally taken three drachms and forty-five grains in one draught. She slept continuously for twenty-four hours, and was very somnolent for twenty-four hours longer, while the peculiar chloroform-like odor of the breath was distinctly perceptible at many yards' distance from the patient."

The Correction of Prostitution.

A correspondent of the *Medical Press and Circular* writes on this topic:—

Boys are left to work out the most important problem of their lives alone, or assisted by the exaggerated notions of companions a little older than themselves, while the natural guardian stands by, stoically indifferent to the life and death struggle going on before his eyes, or is deterred by a false shame from stretching out a merciful hand to pluck the mask from, and reveal in all their horror, the true features of the monster Lasciviousness, clothed by the ardent imagination of youth with the beauty and fascination of a goddess. Whereas, they should be taught that chastity, not merely physical but mental, is the greatest earthly virtue, and its violation about the gravest social crime they can commit. Instead of which they are allowed, if not encouraged, to believe that their animal passions may be indulged in to their fullest extent with impunity; for their wildest excesses are either quietly ignored by their relatives or noticed with a shrug, and the apology that "young men will be young men," and must "sow their wild oats," as if we do not reap as we sow; and as we cannot gather grapes from thistles, so neither can wild oats produce a healthy crop. No, let it be impressed upon our boys that as chastity is an essential virtue in their sisters so it is equally indispensable in themselves; and that its violation is, morally, as grave a crime in the one case as the other.

Further, let them be taught that youthful continence adds materially to the enjoyment of after-life, and especially in the married state.

Both our boys and girls must be educated with a view to their becoming husbands and wives as soon as possible after reaching maturity; a consummation which is most devoutly to be wished for, but practicable only when the overcrowding of our towns and cities, and our country districts too, has been remedied by free emigration to the colonies, where large families are yet, what they ought everywhere to be, a blessing and not a curse.

Again, it should be made a felony for a man to *seduce* a woman, whether she gave consent or not; in which case fewer recruits would be added to the mournful army of the streets.

A class of professional prostitutes, however, is undoubtedly one of the safeguards of society as at present constituted; but it is one that best organizes itself, according to the law of supply and demand; and intervention, if at all, is only required to wisely repress its exuberance.

To sum up, we must prevent our public women from soliciting prostitution, as we prohibit our mendicants from openly asking alms; we must earnestly inculcate chastity of mind and body on our sons, and assist them, by a more manly system of education than at present obtains, to rule their passions, which, judiciously managed, are capable of restraint, and may be brought, though not without an effort, into perfect subjection to the will; we must train our youth to look upon marriage as the grand object for which they have been brought into the world, and we must enable them to attain that object by a properly organized system of emigration. Our girls, too, must be instructed that they have something else to live for besides dress and parade, namely, to become wives and mothers; and when we have succeeded in accomplishing all this, and I firmly believe the time will come when it shall be done, prostitution will sink into unnoticeable limits, and venereal disease diminish in due proportion.

The Surgical Treatment of Aneurism in its Various Forms.

At the Royal College of Surgeons of England Mr. Timothy Holmes, Professor of Surgery and Pathology to the College, has been delivering a course of lectures on aneurism. The main propositions which he endeavors to establish are as follows:—

1. The superiority of the modern method of ligature, with catgut, cut short and buried in the wound, does not preclude the employment of compression.

2. There are forms of carotid aneurism easily curable by compression, and the compression of the carotid artery, though difficult and painful at first, may often be rendered successful by perseverance both on the part of the surgeon and the patient. For these reasons the ligature of the carotid, which has hitherto been a very fatal operation, ought as far as possible to be avoided.

3. When the ligature of the carotid becomes necessary, it may often be advisable to evacuate the contents of the sac, and secure the distal end of the artery.

4. Brasdor's operation on the carotid artery, though very rarely indicated, yet rests on sound anatomical and surgical principles.

5. Traumatic aneurisms and wounds of the vertebral artery are often confounded with lesions of the carotid, but such injuries ought to be diagnosed from those of the carotid, and may very probably be successfully treated by compression, or by the old operation.

6. Under the term "orbital aneurism" appear to be comprised several different affections. Some of these lesions seem to be spontaneously curable, or to have little tendency to a fatal result, and the others are very probably often curable by milder measures than ligature of the carotid, which should therefore be avoided in this disease as long as possible.

7. It is possible that, in rare cases, intracranial aneurism may be diagnosed and successfully treated.

8. Arterio-venous aneurism in the neck is usually, but not always, harmless.

9. There are many cases of axillary aneurism which are curable by compression, and many instances of cure by this method are already known. Ligature of the subclavian, on the other hand, is a very deadly operation, and the more so the higher the aneurism extends.

10. Though Mr. Syme appears to have been in error in speaking of the old operation as being generally preferable to the Hunterian ligature in axillary aneurism, yet there are cases of disease and, more rarely, of aneurism of that artery, in which a surgeon may be justified in preferring it; having always before his mind, however, the possible necessity of amputation.

11. Manipulation, or some other mode of local treatment, may possibly be successful in some cases of axillary aneurism; but there is no trustworthy experience on this head at present.

12. Brachial aneurism, traumatic or spontaneous, as also similar aneurisms below the bend of the elbow, may be usually treated with success, in the absence of heart disease; which, however, often complicates the spontaneous form.

13. Arterio-venous aneurism at the bend of the elbow is now commonly made amenable to digital compression, properly applied.

On Ague and its Varieties in Childhood.

Dr. BOHN, in the *Jahrbuch fur Kinderheilkunde*, April, 1873, quoted by the London *Medical Record*, gives the results of his observations upon ague as it occurs among children in Königsberg in East Prussia. He speaks of cases in which remarkably strong rolling or convulsive movements of the fœtus in utero seemed to show that the fœtus suffered from ague. In these cases the mother also had ague. The fit occurred on the same day in mother and child, or on alternate days. The fact of intrauterine ague is confirmed by children being born with enlarged spleens and highly cachectic; sometimes regular ague is noted in new-born children.

Bohn tabulates 462 cases of regular ague in children of fourteen years and downwards (the arithmetical errors in the table, as usual, are not few). Between the ages of two and seven years inclusive, there were, on the average, forty-six cases to each year: between eight and fourteen years, an annual average of twenty-four cases: one year and under, twenty-one cases: showing a predisposition to ague between the ages of two and seven years inclusive. Sex made no difference. The proportion of frequent occurrence as to different types was: Quotidian=3, tertian=2, quartan=1. The fits commonly happened between midday and midnight, especially in the evening.

Relapses were very common: Griesinger is quoted to the effect that sixty-four per cent. of relapses occur in children under eleven years old.

In young children the ague sometimes took on a continued or remittent type at the beginning. Even when fully developed, the paroxysms were usually imperfect and fragmentary, and especially so in very young children. Of the stages, that which is best marked, both as to distinctness and duration, is the hot stage. Dr. Bohn speaks of two cases of unilateral ague (if one may say so): one side of the body being burning hot, the other quite cold. The cold stage is usually not very well marked. The sweating is less abundant than in adults. The enlargement of the spleen is an important means of diagnosis, on account of these uncertainties in the type of the ague. Gastro-enteric catarrh is a very constant companion of ague in children; vomiting, diarrhœa, even cholera, occur: and for these reasons the period between the paroxysms is not always free from fever.

Cachexia ensues much more rapidly than in adults: two paroxysms may suffice to make its onset apparent. There are pallor, swelling of the gums, and, later, swelling of the hands, feet, and face; the urine is not albuminous. The enlarged spleen, chronic gastro-enteritis, atrophy of muscles, discoloration of skin, hemorrhagic diathesis, parenchymatous lesions of liver and kidneys, occur in later stages of the cachexia. Noma pudendi is not uncommon.

With regard to ague in the first year of life, Bohn remarks that the three stages of the paroxysm are sometimes very well marked; and gastro-enteric catarrh is seldom or never absent.

The irregular forms of ague were especially febres comitatæ, ague attended with unusual symptoms. These unusual symptoms were of two kinds: those connected with lesion of the nervous functions, and those connected with catarrhal affections of the gastro-enteric and pulmonary mucous membranes. 1. Febris intermittens soporosa is met with commonly in very young children. After a few ague-fits, the infant suddenly becomes exhausted and unconscious, apparently moribund; howbeit, the two cases

narrated by Bohn recovered under stimulation. 2. Febris intermittens convulsiva occurred in seventeen cases (thirteen boys and four girls), all under nine years of age. The convulsions are of two kinds, those connected with the pyrexia, usually accompanying the first paroxysm only, and those connected with the cachexia, the former more common but less serious. 3. Febris intermittens neuralgica is not so very uncommon as might be supposed when we bear in mind the infrequency of neuralgic affections in children. Bohn saw twelve cases, and in nine of these there was trigeminal neuralgia, in one sciatic, in one cardialgic, in one proctalgic. 4. Febris intermittens vertiginosa is not common. 5. Febris intermittens psychopathica; in four children a typically recurrent excitability, unruliness, or deep melancholy, with ill-marked febrile symptoms, seemed to point to a tendency of the same kind as that which leads to mania during the fever-paroxysm in the adult. Febres comitatæ with severe laryngeal or pulmonary catarrh, or pneumonia, do not call for special reference.

Febris larvata, or masked ague, Bohn believes to be exemplified by cases of periodical bloody evacuations from the bowel, almost or altogether replacing the usual symptoms of the ague fit. In the intervals, the pseudo-dysentery ceased.

Medicinal and Moral Remedies for the Cure of Insanity.

Dr. FRANCIS M. LUTHER writes to the London *Medical Press and Circular*: If the treatment is instituted early, before the disease becomes a habit, relapse will be less frequent. It essentially consists in a cerebral hyperæmia, the result in most cases of a poison produced by mal-assimilation, acting upon nerve tissue which, from defective organization, is liable to attract, and be affected by, an amount of blood poison which would be harmless to a perfectly healthy brain. The predisposition may exist without any manifestation of disease of the brain, while there is youth and bodily health, that is to say, while digestion is perfectly carried on, while the chylopoietic viscera elaborate pure healthy blood, *sanguis moderator nervorum*, and while the liver and other emunctory glands promptly remove all products of waste or mal-assimilation, veritable poisons if unduly retained in the system. The medical treatment should be evacuant, sedative, and lastly, tonic, but by no means stimulant.

First in order I rank purgatives, especially where constipation exists with fetid perspiration or urine. The ancients sent their lunatics to Anticyra to be purged with hellebore, and attached great value to this mode of cure. We do not employ this plant, but cholagogue or aloëtic purgatives are most useful.

Secondly.—Exhibit chloral in bad cases of insomnia, both day and night, in milder ones at night only, preceding the dose by fluid magnesia, so as to make its action more certain. Sleep is produced, hyperæmia checked, and reconstruction of wasted nerve tissue resumed.

Thirdly.—Employ the sedative agency of hot baths, not by any means cold ones. It is soothing, not bracing, the nervous system wants. Mania is a sort of latent fever. Indeed, it often follows on fevers which have no crisis, like influenza. Warm baths produce a transient exaltation of the feverish state succeeded by a calm. They should be taken at bed-time. Turkish baths are excellent too if care be taken to pour enough of hot water on the head on entering the bath, and to avoid cold effusion on leaving it until the disease is nearly subdued.

Fourthly.—When the stomach and liver have been well acted on, and in the intervals of purgation, exhibit alkaline bitters, nitro-muriatic acid, or arsenic.

Fifthly.—Do not overfeed, but let the meals be light and frequent. Fish is not to be recommended, as it contains a large amount of phosphorus, which is found in excess in the brains of the insane. It flushes the face and determines blood to the head, like alcohol.

After the Medical treatment of insanity comes the moral treatment, the efficacy of which in a great measure depends upon the co-operation of the patient, which is to be solicited in incipient or mild cases. It is not to be counted on in acute or aggravated ones. Without any excessive thwarting, or opposition, they should be taught that a strict observance of the ten commandments, and "doing as they would be done by" is the most efficacious preventive of insanity. Let them cultivate forbearance and toleration, for they assuredly have much need of both, and bitterly resent criticism, although their eccentricities provoke it, or the mere withholding of sympathy which they do not court.

Secondly.—The patients should have full liberty to follow their bent or hobby, if not mischievous. A hobby is, indeed, a very useful safety-valve. As an Irish proverb says, "a man's will is his life." But where it clashes with right or duty self-abnegation is to be elected.

Thirdly.—Interesting occupation ought to be pursued. If useful also, so best. It ought not to be allowed to fatigue the patient, however, by too long continuance.

Fourthly.—The society of healthy minds should be cultivated, for nervous and morbid people are mutually intolerant of each other, and effectually hinder a cure. Change of air and scene generally include the foregoing. The children of those who have displayed any insane tendencies should be educated morally and physically so as to hinder the development of the disease, for though the skill of the ablest physician (valuable as it is to the individual patient) can but little affect the bills of mortality within the sphere of his practice, it is not so with the student of hygiene, who, if empowered to enforce the observance of the laws of health

upon communities, can count those that his science rescued from premature death, not by twos, or threes, or scores, but by hundreds and thousands. Prevention can do much, curative treatment comparatively little. Be not satisfied with absence of disease. "Disease is not *per se*, but means the incapacity of resistance of the diseased." It is but the explosion of long accumulating forces, forces which could gain no entry into mind or body were they filled with right and health.

The Muscular Sense.

Dr. M. BERNHARDT communicates in the *Archiv fur Psychiatrie*, iii Band, 3 Heft, some experiments which he has made to determine the existence of a muscular sense. On this point the views of Charles Bell have been denied by Schrœder, Spiess, Schiff and Leyden, who hold that the feeling we have of the posture of the limbs is not communicated through a property existing in the muscles, but of the parts covering and surrounding them, which are pressed or left relaxed by their contractions or relaxations. Muscular fibre itself seems very deficient in ordinary sensibility, nor is the perception which we have of the performance of certain motions destroyed by the loss of tactile sensibility caused by section or disease of the spinal nerves.

Johann Müller thought that the mind became conscious of the performance of a muscular exertion by noting the measure of the effort of volition necessary to bring it about. Physiologists are unwilling to admit that the anterior root of the spinal nerve should both conduct a stimulus to the muscles and convey in a centripetal direction the states resulting from that stimulus. Dr. Bernhardt having invented a simple apparatus resembling a little gallows with three pulleys, so that the weight should drop at one end, and the hand or foot of the person experimented upon should have the traction applied at the other, made a number of observations by which he found that one could distinguish weights even when the muscles were made to contract by the induced current, without any effort of the will.

It might, however, be said that the subject of the experiment could distinguish weights by the varying amount of pressure upon the skin, and Dr. Bernhardt found that this perception of pressure by the skin was a delicate one. In order to eliminate this disturbing condition to the isolation of the sought-for muscular sense, the author tried his experiments upon some patients suffering from spinal disease, in whom the sensibility of the skin was so much impaired that they had no perception, apart from vision, of the situation of their limbs, and were unconscious when they were moved by somebody else, and who did not feel the strongest induced currents which threw their muscles into energetic contractions. In two of these cases he found the capacity to distinguish weight well sustained.

Dr. Bernhardt's observations agree with those of Leyden and of Brown-Séquard, who states that in spinal diseases, where sensibility is impaired or destroyed, the muscular sense (Kraft Sinn) remains intact. The author states his opinion in the following terms:—"With Leyden, Bernstein, and Johann Müller, I hold that the sense of weight proper (Kraftsinn κατ' ἐξοχήν) is a function of the psyche, that force is conveyed by an exertion of volition through the nervous trunks distributed to the voluntary muscles, and that the sensorium is conscious of the amount of force given out, and how it is modified, in order to overcome resistance." The author confesses that the mind, in coming to a conclusion about the execution of voluntary motions, is much aided by the sensibility of the skin, fascia, and periosteum, as well as by the eye.

Consumption.

Dr. PIDOUX, Member of the Academy of Medicine, has written a book which has gained him a prize of 10,000 francs, and which is entitled "Etudes Générales et Pratiques sus la Phthisie." In this work he asserts that tubercle is a product analogous in structure with the elements of lymphatic glands, and arises at the expense of the connection tissue. Cheesy-like formations and tubercle are in his eyes pyoid products.

This author admits two varieties of phthisis in the dead house; but both of these, he thinks, arise from the same diathesis, and the true cause of phthisis resides in an alteration of the lymphatic apparatus. He also establishes a distinction between galloping and acute phthisis. Acute phthisis has a sudden onset, a certainly fatal prognosis, and is granular from the first, which is not the case with galloping consumption.

He considers that several morbid states once in possession of a patient are antagonistic to phthisis. Such are arthritis, herpetism, cancer, lead poisoning, alcoholism, and paludal intoxication, chlorosis, and hysteria.

He divides chronic disease into—1. Capital or initial disease; 2. Mixed; 3. Ultimate. Thus rheumatism, gout, scrofula, and syphilis are initial diseases; herpetism, is a mixed disease; and phthisis an ultimate disease.

Laënnec and Louis thought that hæmoptysis is an almost certain proof of tuberculization; Trousseau was not of this opinion. M. Pidoux takes the side of Laënnec and Louis.

M. Pidoux believes in the spontaneous cure of pulmonary tubercle. Remedies are without action on the tubercles themselves, he maintains, but act on the healthy tissues, sustaining and nourishing them.

Warm baths are recommended in the treatment of consumption by Dr. Souplet, of the Pitié Hôpital, Paris, contrary to an opinion generally accepted popularly that baths ought not to be used by persons affected with phthisis. Few physicians dare to advise baths in diseases of the lungs. The baths used at the Pitié were of simple water, and of a temperature of about 3° C. below that of

the patient, warm water being added from time to time. The duration of the baths used was from 20 to 45 minutes, and they were given perhaps every second day.

During the three first baths patients experienced a little feeling of oppression remaining for four or five minutes. In patients who coughed, the cough became calmer in a few minutes, and the expectoration easier, whilst the frequency of pulse and temperature were gradually lowered. The patient felt better on returning to bed; had more appetite, and sometimes a temperature 2° lower, whilst the pulse fell sometimes from 12 to 20 beats. Other phenomena were ameliorated, such as diminution of shivering attacks and night sweating, which was much diminished and even suppressed after the third or fourth bath. The cough was less frequent, sleep better, and diarrhœa diminished, and sometimes arrested. In the thesis of M. Souplet there are twelve observations, of which nine refer to phthisis, two to pleurisy, and two to pneumonia.

There was never observed in any of these cases any inconvenience which could be attributed to the use of the bath, and always real advantages accrued.

Researches on Pyæmia.

The *British Medical Journal* says:—Dr. Birch-Hirschfeld, on examining daily the pus coming from a wound, found that, with the ushering in of the first symptoms of pyæmia, the pus also showed a corresponding change, consisting in the presence of micrococci, either in pairs, strings, or colonies (the latter especially when pyæmia was far advanced or rapid in its course), and in an altered appearance of the pus-corpuscles, which were finely granular, of less definite outline and lustre, and which showed their nuclei very distinctly without the addition of any reagent.

The *blood* of such pyæmic patients contained similar micrococci, and its white corpuscles had undergone a change very similar to that of the pus-corpuscles. Sometimes the pus of a pyæmic patient would contain, besides these, a quantity of the *bacterium termo* or *bacterium lineola*, which are the common bacteria of most putrescent matter; while micrococcus is, according to Cohn, Klebs, and Hirschfeld, not to be considered the ferment of putrefaction.

Healthy pus coming from a healthy wound or from a simple abscess showed no micrococci and no altered pus-corpuscles, while putrescent pus (either after exposure to air or coming from an unhealthy or gangrenous wound) contained only the bacteria (termo, lineola, and bacillus) due to putrefaction.

The difference between pyæmic and putrescent pus was now further shown by inoculations on rabbits. Healthy pus, injected subcutaneously into a rabbit, gave rise only to a local abscess, without any further disturbances. Putrescent pus gave the symptoms of septicæmia, as described by Bergmann, Sanderson, and others; larger quantities only being fatal, and the fever appearing almost immediately after injection, showing the sepsis curve of Bergmann very well; while pus from a pyæmic patient, similarly introduced into a rabbit, gave rise to a different course of symptoms. The animal remained well for five or six days; and this period was followed by one of high and intermittent fever, diarrhœa, emaciation, and eventually and almost invariably by death from the sixteenth to the twenty-fourth day. Pus, blood, and the metastatic changes in such rabbits, showed again all the distinctive pyæmic properties described.

The importance of these researches, which not only show us the important part which the micrococci play in the production of pyæmia, but which also define pyæmia as quite distinct from septicæmia (in opposition to the researches of Tiegel, Klebs, and Eberth), is not to be underrated; but a repetition and further extension of them would be highly desirable. Dr. Birch-Hirschfeld examined the different morbid products without any further reagents.

The Treatment of Syphilitic Warts.

Dr. PROKSCH, as quoted by the London *Medical Record*, has abandoned in all cases the excision and cauterization of pedicled warts as needlessly painful. He ties them with soft and tolerably thick silk or cotton thread, tight enough to strangulate without cutting them. He takes especial care to place the ligature close to the root, but not to include any true skin. When the warts are short and stumpy, he draws the noose home, but, before tightening, pushes it down around the root by means of a pointed stick. When the warts are large or compound, he places a separate thread around the several portions, being careful never to include a large quantity of tissue in one ligature. If the warts be very soft, or secreting matter freely, he dresses them for a day or two with cold lotions, so as to check the irritation before the ligature is applied. If they be situated within a phimosis, he uses injection freely, and ligatures all the warts within reach, getting hold of deeper ones as the swelling subsides and the prepuce can be folded back, until all are removed.

Warts that are too flat and broad to be included in a ligature must be cauterized by chemical or actual caustics; but, where caustics are used, the greatest care must be taken to keep the surfaces quite clean and dry, lest they suppurate and troublesome abscesses form. Before applying caustic, the warts should also be carefully washed, and then dried by dabbing with cotton-wool. He recommends for soft succulent warts a weak solution of chloride of iron, or powdered alum and tannin; for hard dry warts he prefers strong nitric acid to all other agents. These applications, if used to only a limited amount, cause no irritation, and can be repeated every two or three days till the warts waste away.

MEDICAL AND SURGICAL REPORTER.

PHILADELPHIA, SEPT. 6, 1873.

S. W. BUTLER, M. D., D. G. BRINTON, M. D., Editors.

☞ Medical Societies and Clinical Reports, Notes and Observations, Foreign and Domestic Correspondence, News, etc., etc., of general medical interest, are respectfully solicited.

Articles of special importance, such especially as require original experimental research, analysis, or observation, will be liberally paid for.

☞ To insure publication, articles must be *practical*, *brief* as possible to do justice to the subject, and *carefully prepared*, so as to require little revision.

☞ Subscribers are requested to forward to us copies of newspapers containing reports of Medical Society meetings, or other items of special medical interest.

We particularly value the practical experience of country practitioners, many of whom possess a fund of information that rightfully belongs to the profession.

The Proprietor and Editors disclaim all responsibility for statements made over the names of correspondents.

MODERN PSYCHOLOGY.

The progress of psychology within the last score of years, indeed, we may say, since the era of Hartley's classical work, has been marked by a decided tendency to rest more and more completely on a physiological basis. The old plan of diving within one's self, and on the strength of observations there made to erect a vast superstructure of metaphysic and ontology, has been, not entirely discarded, but condemned by all the really clear thinking minds of the age.

This by no means results, as some suppose, in doing away with all psychology and metaphysic. On the contrary, it merely places them on the stable basis of the inductive and verifiable sciences. Psychology is now identified with the study of the functions of the nervous system; we do not say that it is nothing more than this; but this far only is it to be considered a physical science; and whatever mental phenomena can be explained, either by demonstration or analogy, as the result of nervous action, should not be attributed to any other cause.

The reflex action of the spinal cord, for example, which is common to all vertebrate animals, and which continues in some even after decapitation, cannot possibly be attributed to any other source. But this action is in all respects identical with the reflex or automatic action of the cerebrum, by which we perform a thousand daily acts without directing to them volition or attention. Hence it is impossible to attribute these latter to any other than mere manifestations of nerve force.

But most, if not all these automatic cerebral movements were at first volitional, and brought about by directing the attention to the act to be performed. In other words, they were intelligent or reasoning acts, and became automatic through habit. Intelligence or reason, therefore, would seem to be evidenced only through the will. But according to modern psychologists the will itself is merely the expression of the strongest desire or emotion, and by no means an autonomy.

This circumscribes all mental effort in an endless chain of material necessity; and though this view, when fully explained, may not prove so very repellant, and if well supported ought to be adopted at least provisionally, nevertheless it fails of proof, and with it falls part of the superstructure of modern psychology. Especially that so brilliantly advocated by Herbert Spencer is deficient in this respect, and though supported by his able pleading in a way that imposes on most readers, his theories will not bear the tests which he applies to others.

The weakness of scientific psychology in this respect, and consequently its general failure to meet the requirements of the day, arises from its violation of what we most thoroughly believe, and from its inability to grasp or even to face the highest problems of life.

No fact of experience, no belief derived from observation, is so strong as the conviction that in certain respects we are free agents. No man ever lived who disputed this, but a metaphysician committed to the support of a theory; and even he acts con-

stantly on the contrary belief, and hence, by Professor Bain's own test, proves the truth of what he so strenuously denies.

Notes and Comments.

Corrigenda.

Current vol., p. 130, No. 8, read *shorter* instead of *stronger*. Also, same page, instead of 100 : 126, read 100 : 26.

Chloroform in Heart Disease.

Dr. J. W. Poole has recently discussed whether the presence of heart-disease, even when strongly marked, is necessarily a contra-indication to the administration of an anæsthetic. He believes that it is not. He has searched all the authorities at his disposal on this point, but does not find anything very definite on the subject. Without citing any of them, however, he says that most of those who take notice of it at all agree with the opinion he had expressed. If any anæsthetic be administered, which should it be, chloroform or ether? He answers, chloroform, for the following reasons. It is more quickly administered, and more manageable; it requires less to be given; it produces a less violent and protracted stage of excitement. He has seen chloroform administered for the dyspnœa of heart-disease, both by the stomach and by inhalation, with decided benefit, and without the least bad effect.

Delpech's Rules for Tenotomy.

The eminent Surgeon, Delpech, of Montpellier, laid down the following rules for tenotomy of the tendo achillis:—

1st. The tendon to be divided must not be laid bare; its section must be done by a *detour*, and not by an incision through the skin parallel with that in the tendon. Without taking this precaution the dangers of exfoliation would be incurred.

2d. Immediately after the section of the tendon its ends should be placed in mutual contact, and they should be maintained in that position by a suitable apparatus all the time necessary for their reunion.

3d. Reunion can only take place by means of an intermediate fibrous substance (*tissu inodulaire*), which, before its solidification, can, and ought to be submitted to the gradual and careful extension that shall give it the length required to make up the shortness of the muscle.

4th. When this amount of extension has been gained, the parts are to be immovably fixed in the attitude thus established, and are to be thus confined until the new substance has acquired its full solidity.

Liquor Picis Alkalinus.

The following preparation is that of the late Dr. H. D. Bulkley, of New York, who proposed it to fill the place of a secret French preparation of tar:—

R. Picis liquidæ, ℥ij.;
Potassæ causticæ, ℥j.;
Aquæ, ℥v. m. ft. sol.

This mixes with water in all proportions, and discolors the skin to a very moderate extent. It dries rapidly and leaves very little stickiness. He has used it in all degrees of strength, and regards it as one of the best methods of employing tar. The potash heightens the anti-pruritic effect of the tar. The solution he has employed with advantuge in eczema, both in its chronic stage with thickenings, and in the more acute forms, where exudation has about or nearly ceased and the itching is intense. In chronic cases with infiltration, it may be used in full strength. Good success has followed its use in lupus erythematosus and psoriasis.

The Administration of Perchloride of Iron.

Dr. H. L. Snow remarks that delicate patients very frequently object to the astringent metallic taste long remaining in the mouth after the administration of tincture of perchloride of iron, the flavor of which is but very imperfectly disguised by the syrup or spiritus chloroformi with which it is usually ordered. It may not, perhaps, be too insignificant a matter for mention, that the substitution of a small quantity of glycerine (about half-an-ounce to an eight-ounce mixture) will altogether obviate this inconvenience.

Syrup of the Bromide of Iron.

Take of bromine three troy ounces; iron (in the form of wire) 350 grains; distilled water, three fluid ounces; citrate of potash, six troy ounces or q. s.; syrup, a sufficient quantity. Put the iron, with the distilled water, in a flask, and add of the bromine two troy ounces in small portions at a time, allowing the mixture to cool, if necessary, before the addition of each fresh portion.

When the odor of bromine has disappeared, warm the mixture gently, until it assumes a green color; filter and add the remainder of the bromine. Transfer the resulting solution of ferric bromide to a porcelain mortar, and add gradually, with constant trituration, citrate of potash, until the color of the mixture changes from brown to green; finally, add simple syrup to make up thirty fluid ounces. The syrup thus prepared corresponds nearly in strength with the syrup of the iodide of iron, and may be administered in doses from twenty to thirty drops. It is elegant in appearance, not disagreeable in taste, and is not incompatible with alkalies or with tannic acid.

The Nature of Fever.

In a German Exchange, Dr. HUTER attributes the increased temperature in fever, not to augmented production, but to a diminished loss of heat, and he attributes the phenomena of fever to blocking up of a number of the smallest vessels in the general circulation, including the pulmonary. In his opinion, therefore, fever does not necessarily depend on chemical poisoning of the blood, but may be explained by mechanical disturbance of the circulation. He also believes that the enlargements of the liver, spleen, and kidneys in fevers are due to disturbance of the circulation through the obstruction caused by monads.

The Poison of Cholera.

Drs. LEWIS and CUNNINGHAM, in their researches on this topic, say: "One of the most important points determined by these observations is the fact that the blood in cholera is, as an almost invariable rule, free from bacteria, either actual or potential." They say, also, that there is absolutely nothing in favor of the view that the presence of fungus-germs is a characteristic of the disease; and, with regard to the presence of sarcinæ in the blood, they own that they are by no means constant. These observations, therefore, "do not tend to indicate the presence of a microscopically demonstrable morbid poison."

The Restoration of Chloroform Injured by Age.

Where changes are induced in chloroform by time, light, moisture or atmospheric pressure, E. B. SHUTTLEWORTH is of opinion (*Canadian Pharm. Journ.* vol. vi, p. 345) that by far the most injurious products of decomposition are chlorine and hydrochloric acid. These products may often be found in an aqueous layer floating on the top of imperfectly rectified chloroform which has been kept some time. The incomplete removal of sulphuric acid which has been used in rectification, also leads to the same change. For the restoration of chloroform that has thus become spoiled, he recommends that it be shaken with a dilute solution of hyposulphite of soda. It should then be separated from the supernatant liquid and again washed; this time with pure water. After being separated, the chloroform should be passed through filtering paper to rid it from traces of moisture, when it will be found much improved and comparatively sweet.

Presence of Albumen and Sugar in the Urine due to Pressure on the Pons Varolii.

M. LIONVILLE showed, at the Biological Society of Paris, the brain, etc., of a man, whose history was as follows:—

Though previously apparently in good health, he fell suddenly, struck down by an apoplectic attack. The collapse was nearly complete; he lay on the back, and he spoke indistinctly a few words; the respiration stertorous; dilated and non-contractile pupils; extreme heat of the face, while the lower limbs were very cold. The bladder was distended and paralyzed; the catheter drew off a quantity of urine, which contained albumen and sugar abundantly. He sank the same day, and on autopsy, an extravasation was found at the floor of the fourth ventricle, just at the point where experimental injury proves the same conditions are developed.

Is Phosphorus Thought?

There appears still to be much difference of opinion among chemists about the changes which occur in the secretion of the kidneys after waste of nerve tissue. For example, Dr. L. Hodges Wood, as the result of his observations published in 1869, denies the correctness of the generally received statement that the amount of phosphates in the urine is increased by fatiguing mental exercise. He found that while the alkaline phosphates were slightly increased the earthy phosphates were notably diminished after mental work, and that when the mind was not much employed the excretion of earthy

phosphates was increased instead of diminished. He accounts for this by the hypothesis that when the brain was worked it withdrew more phosphorus from the circulating fluid.

Histology of the Gray Substance.

Dr. BOLL affirms that the stellate cells, described by Kolliker, in the interstices of the nerve-fibres of the spinal cord have no real existence. He describes the substance which makes up the main bulk of the gray matter of the brain and cerebellum, as a collection of granules grouped together, or holding by one another in a highly characteristic manner, which he compares to the arrangement of crystals of hoar-frost. This arrangement allows the gray substance of the brain to be easily distinguished from a portion of granular protoplasma, such as that taken from the cells of the tradescantia or from pus-corpuscles.

Inferior Brains.

Recent anatomical researches show that in the anthropoid apes the island of Reil is always covered, and this is also the case with some microcephalic brains which have been already described by other observers. It may be here noticed that the great difference between microcephales and the brains of higher apes is that the temporo-sphenoidal convolutions are the first to appear in the ape, whereas in the microcephalic idiot, as in the normal human brain, it is the frontal lobe which is the first to appear, and the temporo-sphenoidal are the last.

Nephalism.

This word, derived from a Greek word signifying "sober,' was brought into public use by the late Professor Miller, of Edinburg, several years ago. It is now adopted as a title for the 'temperance movement' in France, and we learn from the *Gazette Hebdomadaire*, of June 27, that M. Merille de Colleville, continental representative of the *Ligue Nephalienne Brittannique*, gave "very interesting and highly encouraging reports of the progress of nephalism in England," to a public meeting of the nephalic league in France.

Antidote to Mushroom Poisoning.

Experiments lately made with the active principle of mushroom (muscarine), pure agaricus muscarius, show that its effect on the system is the reverse of that of atropine. It causes a great sensibility to light and increase of the pulse, and seems in its action to promise the best remedy for belladonna poisoning, and *vice versa*. Its subcutaneous injection was used.

NEWS AND MISCELLANY.

Mr. Gladstone on the Doctors.

Mr. Gladstone was a guest at the recent dinner of the British Medical Association. In acknowledging the compliment of a toast to "Her Majesty's Ministers," Mr. Gladstone paid a high, but not undeserved tribute to the medical profession. He said that but for the care and watchfulness of a succession of able physicians it would have been impossible for him to have gone through the fatigues of political life. "It is," he proceeded, "among the mournful and noble distinctions of your illustrious profession that, although its members may not receive that acknowledgment which awaits the soldier when he falls on the battle-field, yet they are to be found in countless numbers among the truest martyrs in the cause of humanity." He complimented the practitioners of the medical art on their high claims to consideration for their promotion of beneficial sanitary legislation. He said that medical knowledge has advanced in recent years in a degree which is not, perhaps, paralleled in any other profession. There is at the present day "a greater and more sustained earnestness of purpose, and a more general exaltation of the aims of medical men."

Mr. Gladstone said in conclusion: "This age is distinguished by an unbounded activity in all the sciences of observation. Of all those sciences yours is the noblest. It is given to you to study the relations between the wonderful body and the still more wonderful soul and mind of man. You tread that border land in which the two come in contact. It is very easy to describe the post-office or the railway system, but you have to deal with a thing far more subtle when you attempt to grasp human nature as a whole. Human progress is not to be described by formularies. It is only by the most patient observation that a sound and comprehensive knowledge on such a subject can be acquired. To you it belongs to seize the great opportunities and to accept the great responsibilities which attach to the profession of which you are members, and to show yourselves worthy of the great vocation with which you are entrusted."

Typhoid Fever in London.

The London *Medical Record*, of Aug. 9, says:—"The outbreak of typhoid fever, to which attention has this week been drawn in Mayfair and Marylebone, is one of the most remarkable and severe outbreaks with

which we are acquainted. A great number of families have been attacked, and eminent medical men have largely suffered. We are acquainted thus far with about 165 cases in forty-seven families. The cause of this severe epidemic seemed at first very mysterious; but a clue has been suggested. The consideration of the character of two outbreaks in his nursery led Dr. Murchison to suspect his milk supply as being the vehicle of the poison. The suspicion once started, the source of milk supply in the forty-three families reported by medical men as suffering from invasions of typhoid was investigated, and it was found that, although living in different parts of the town, forty out of the forty-three families were supplied from the same dairy. We have said that circumstances point very strongly to the milk supply being the source of the poison; and so much is this the case that Sir William Jenner and Dr. Murchison, who have been called to see a number of the patients, have thought it their duty to represent the urgent nature of the emergency to the vendors of the milk, and to advise them to suspend their trade. A joint committee of inquirers proceeded, on Monday evening, to the farms whence the supply is drawn, in order to investigate the possibilities of foreign sources of infection to the milk at these farms."

Selling of Liquor by Druggists.

We are glad to see that this frequent outrage on propriety is receiving legal notice. President Judge John Dean, of the Twenty-fourth Judicial District, composed of Huntingdon, Blair and Cambria counties, in sentencing several druggists of Tyrone, indicted and convicted of selling liquor without a license, remarked: "Druggists are authorized to sell liquor for medical purposes, subject, however, to the risk of indictment. A physician's prescription is not of itself a safeguard for the druggist. If the latter, even on the prescription of a regular physician, sells liquor to persons of known intemperate habits, or to those who are known to use liquor as a beverage, he is liable to indictment, and if found guilty will be punished to the extent of the law. In short, in the opinion of the Court, a druggist who sells liquor for any purpose whatever, or upon the prescription of the most eminent physician in the country, does so at his own risk."

The Action of Cold Water on the Spleen.

Dr. Mosler is of opinion, from a number of experiments and clinical observations, that cold water applied to the skin of the abdomen causes contraction of the spleen, and hence this agent may be made use of in ague. In this respect, however, cold water presents no advantages over quinine, and when strenuously carried out it presents considerable disadvantages, such as chilling of the body, etc. In both recent and old cases of intermittent fever, the author would combine cold water in the form of baths, the cold douche, or the ice bladder, with the simultaneous use of quinine, and this combination is better than either separately. In chronic enlargements of the spleen (such as exists in leucæmia and pseudo-leucæmia) a similar treatment is also followed with good results. In these cases, however, the author recommends that chinodin should be substituted for quinine, as its effects are equally good, and this drug is much cheaper. This may be a serious consideration where, as in the case of leucæmia, the treatment may extend over a long period.

The Excessive Use of "Bitter," Absinthe, etc.

Dr. Decaisne has recently made inquiry into the effect of the excessive use of vermouth, absinthe and "bitter," and more particularly observed the effect of "bitter" on twenty-one males and one female, who were addicted to its excessive use.

He found that "bitter" was manufactured from certain bitter and aromatic herbs, just as absinthe and vermouth, and believes that the spirit used, being derived from beet-root, potato, and grain, probably causes a more marked action on the nervous system than higher class alcohol. The conclusion is arrived at, that the excessive use of "bitter," absinthe, vermouth, grand chartreuse, and sophisticated white wines, tends to cause epileptic seizures, and that absinthe and vermouth ought to be excluded from general consumption.

—The Scandinavian Naturalists held their Eleventh Convention in Copenhagen on July 3d. This society was formed in 1839, and consists of men of science from Denmark, Sweden and Norway, who meet in Convention alternately at Copenhagen, Stockholm, or Gothenberg and Christiania. In the Convention just held, there were 412 members, of whom 290 are Danes, 79 Swedes, 40 Norwegians, and 3 Finns. The Convention was divided into ten sections, to wit: physical and mathematical, chemical, mineralogical, botanical, zoological, medical, anatomical and physiological, public health, ethnological and engineering.

MARRIAGES.

GRANGER—BUTLER.—In Essex, Vt., Aug. 13th, by Rev. H. E. Butler, of Keeseville, N. Y., Frank Clark Granger, of Belmont, Nye County, Nevada, formerly of Randolph, Vt., and Miss Mary Alice Butler, daughter of Dr. L. C. Butler, of Essex.

NELSON—RUBE.—In New York City, Aug. 13th, by Rev. W. Ormiston, D. D., Charles Eugene Nelson, M. D., and Julia, second daughter of William G. Rube, Esq., all of New York City.

DEATHS.

ANDERSON.—Suddenly at Annapolis, Md., Aug. 22, Mrs. Louisa Anderson, wife of Dr. W. C. Anderson, of Stapleton, Staten Island.

COULTER.—At Centreville, Butler County, Pa., George Webster Coulter, M. D., in the 43d year of his age.